

=> s 522/?/cclst
L1 6685 522/?/CCLST
=> s 528/403-421/cclst
L2 2213 528/403-421/CCLST (18 TERMS)
(528/403+NEXT17/CCLST)
=> s (oxetane) (2a) (hydroxy or hydroxyl)

893 OXETANE
121980 HYDROXY
94613 HYDROXYL

L3 15 (OXETANE) (2A) (HYDROXY OR HYDROXYL)
=> d cit ab l3 1-15

1. 5,597,931, Jan. 28, 1997, Total synthesis of taxol and analogues thereof; Samuel J. Danishefsky, et al., 549/214, 229, 510, 511 [IMAGE AVAILABLE] X

US PAT NO: 5,597,931 [IMAGE AVAILABLE]

L3: 1 of 15

ABSTRACT:

The present invention provides three basic routes for the total synthesis of taxol having the structure: ##STR1## The present invention also provides the intermediates produced in the above processes, processes for synthesizing these intermediates as well as analogues of taxol and nortaxol.

2. 5,527,924, Jun. 18, 1996, Total synthesis of taxol; Samuel J. Danishefsky, et al., 549/22, 448, 510, 511 [IMAGE AVAILABLE] X

US PAT NO: 5,527,924 [IMAGE AVAILABLE]

L3: 2 of 15

ABSTRACT:

The present invention provides two basic routes for the total synthesis of taxol having the structure: ##STR1## The present invention also provides the intermediates produced in the above processes, processes for synthesizing these intermediates as well as analogs to taxol. Both the intermediates and analogs to taxol may prove to be valuable anticancer agents.

3. 5,523,424, Jun. 4, 1996, Solvent-free process for the synthesis of energetic oxetane monomers; Aslam A. Malik, et al., 549/510 [IMAGE AVAILABLE] X

US PAT NO: 5,523,424 [IMAGE AVAILABLE]

L3: 3 of 15

ABSTRACT:

This invention relates to a process for the preparation of mono- and bis(azidomethyl)oxetanes. These compounds are prepared by combining a mono- or bis-X-oxetane (wherein X is, for example, a tosylate, mesylate, halogen, etc.) with an aqueous solution of a metallic azide and a phase transfer catalyst. Mono- and bis(azidomethyl)oxetanes can be polymerized to form homopolymers and copolymers with load bearing polyether backbones and highly energetic pendant groups. Such homopolymers and copolymers of the present invention are useful as energetic binders in high-energy formulations, such as propellants, explosives, and gasifiers.

4. 5,516,854, May 14, 1996, Method of producing thermoplastic elastomers having alternate crystalline structure such as polyoxetane ABA or star 7

block copolymers by a block linking process; Robert B. Wardle, et al., 525/410 [IMAGE AVAILABLE]

US PAT NO: 5,516,854 [IMAGE AVAILABLE]

L3: 4 of 15

ABSTRACT:

A method of preparing a thermoplastic elastomer having A blocks and at least one B block, wherein said A blocks are crystalline at temperatures below about 60.degree. C. and said B block is amorphous at temperatures above about -20.degree. C., said A blocks each being polyethers derived from monomers of oxetane and its derivatives and/or tétrahydrofuran and its derivatives, the method comprising:

providing monofunctional hydroxyl terminated A blocks which are crystalline at temperatures below about 60.degree. C. and separately providing di-, tri- or tetrafunctional hydroxyl terminated B blocks which are amorphous at temperatures above about -20.degree. C., end-capping said A blocks by separately reacting said A blocks with a difunctional diisocyanate in which one isocyanate moiety is at least about five times as reactive with the terminal hydroxyl group of the A blocks as the other isocyanate moiety, whereby the more reactive isocyanate moiety tends to react with the terminal hydroxyl group of the A blocks, leaving the less reactive isocyanate moiety free and unreacted, and adding di-, tri- or tetrafunctional B block to the end-capped A blocks at approximately the stoichiometric ratios that they are intended to be present in the thermoplastic elastomer such that the free and unreacted isocyanate moiety on the end-capped A block reacts with a functional moiety of the B block to produce ABA or A.sub.n B thermoplastic elastomers.

5. 5,488,116, Jan. 30, 1996, Total synthesis of taxol and analogues thereof; Samuel J. Danishefsky, et al., 549/214, 229, 230, 510, 511 [IMAGE AVAILABLE]

US PAT NO: 5,488,116 [IMAGE AVAILABLE]

L3: 5 of 15

ABSTRACT:

The present invention provides three basic routes for the total synthesis of taxol having the structure: ##STR1## The present invention also provides the intermediates produced in the above processes, processes for synthesizing these intermediates as well as analogues of taxol and nortaxol.

6. 5,416,225, May 16, 1995, Total synthesis of taxol; Samuel J. Danishefsky, et al., 549/341, 342 [IMAGE AVAILABLE]

US PAT NO: 5,416,225 [IMAGE AVAILABLE]

L3: 6 of 15

ABSTRACT:

The present invention provides two basic routes for the total synthesis of taxol having the structure: ##STR1## The present invention also provides the intermediates produced in the above processes, processes for synthesizing these intermediates as well as analogs to taxol. Both the intermediates and analogs to taxol may prove to be valuable anticancer agents.

7. 5,310,722, May 10, 1994, Synergistic composition comprising a sulfonylurea and a thiadiazolo[3,4-a]py; Willy Maurer, et al., 504/134,

US PAT NO: 5,310,722 [IMAGE AVAILABLE]

L3: 7 of 15

ABSTRACT:

The present invention relates to a synergistic composition comprising a herbicidally active gulfonylurea of formula I ##STR1## wherein Z is a substituted phenyl, thiophenyl, benzyl, pyridinyl, pyrazinyl, hetero-fused phenyl, or alkylsulfonylamino radical;

M is hydrogen; or C.sub.1 -C.sub.4 alkyl; and Het is a substituted five- or six-membered heterocycle having 2 or 3 nitrogen atoms, and a synergistically effective amount of a 5,6,7,8-tetrahydro-1-H,3H-(1,3,4)-thiadiazolo[3,4-a]-pyridazine or 7,8-dihydro-1-H,3H-(1,3,4)-thiadiazolo[3,4-a]pyridazine of formula II ##STR2## wherein X is oxygen; or sulfur;

A--B is --CH.sub.2 --CH.sub.2 --; or --CH.dbd.CH--; and

Phe is a substituted phenyl radical.

The composition according to the invention is suitable for selective weed control in crops of useful plants, especially in cereals, maize, rice or soybeans. The invention relates also to a method of controlling weeds in crops of useful plants, especially in cereals, maize, rice or soybeans, and to the use of the novel composition.

8. 5,214,166, May 25, 1993, Method of synthesizing nitrate alkyl oxetanes; Gerald E. Manser, et al., 549/510 [IMAGE AVAILABLE]

US PAT NO: 5,214,166 [IMAGE AVAILABLE]

L3: 8 of 15

ABSTRACT:

Nitrate alkyl oxetanes are synthesized directly from the corresponding hydroxy alkyl oxetanes by nitrating the **hydroxy** alkyl **oxetane** under non-acidic anhydrous conditions. A **hydroxy** alkyl **oxetane** is reacted with an anhydrous nitrate ester of a carboxylic acid at temperatures below about 10.degree. C. The product of the method, nitrate alkyl oxetane, is produced in relatively high yield without opening of the oxetane ring.

9. 4,997,974, Mar. 5, 1991, Bisphenol derivatives and polymers thereof; Holger Lutjens, et al., 560/57; 526/311, 313; 528/193 [IMAGE AVAILABLE]

US PAT NO: 4,997,974 [IMAGE AVAILABLE]

L3: 9 of 15

ABSTRACT:

Bisphenol derivatives corresponding to formula (I) ##STR1## in which R.sup.1 is hydrogen, C.sub.1-4 alkyl,

R.sup.2 is C.sub.1-12 alkyl,

R.sup.3 is C.sub.1-12 alkyl,

X is C.sub.1-12 alkylene,

Y is C.sub.1-12 alkylene,

Z is hydrogen, ##STR2## and polymers produced therefrom containing structural units corresponding to formula (II) ##STR3## in which R.sup.1, R.sup.2, R.sup.3, X, Y and Z are as defined above.

10. 4,806,613, Feb. 21, 1989, Method of producing thermoplastic elastomers having alternate crystalline structure for use as binders in high-energy compositions; Robert B. Wardle, 528/59; 149/19.4, 19.6; 528/65 [IMAGE AVAILABLE]

ABSTRACT:

A method of preparing a thermoplastic elastomer having A blocks and at least one B block, wherein said A blocks are crystalline at temperatures below about 60.degree. C. and said B block(s) is amorphous at temperatures above about -20.degree. C., said A blocks each being polyethers derived from monomers of oxetane and its derivatives and/or tetrahydrofuran and its derivatives, the method comprising providing hydroxyl terminated A blocks which are crystalline at temperatures below about 60.degree. C. and separately providing hydroxyl terminated B blocks which are amorphous at temperatures above about -20.degree. C.,

end-capping said A blocks and said B blocks by separately reacting each of said A blocks and B blocks with a diisocyanate in which one isocyanate moiety is at least about five times as reactive with the terminal hydroxyl groups of each of the blocks as the other isocyanate moiety, whereby the more reactive isocyanate moiety tends to react with terminal hydroxyl groups of the blocks, leaving the less reactive isocyanate moiety free and unreacted,

mixing said end-capped A blocks and said end-capped B blocks together at approximately the stoichiometric ratios that they are intended to be present in the thermoplastic elastomer, and reacting said mixture with a linking compound having two isocyanate-reactive groups which are sufficiently unhindered to react with the free isocyanate groups of said end-capped polymer.

11. 4,323,501, Apr. 6, 1982, Esters of phosphorous acid; Erich Eimers, et al., 549/218; 987/40, 219 [IMAGE AVAILABLE]

ABSTRACT:

Phosphites of the general formula: ##STR1## in which n.sub.1 is an integer;

n.sub.2 is 0 or an integer;

n.sub.3 is an integer;

at least one of the groups R is an oxetane group as hereinafter defined or a hydrocarbon radical being substituted at least by one oxetane group as hereinafter defined;

the remaining groups R are selected from alkyl, aralkyl, cycloalkyl, aryl and hetaryl groups; and

the group or groups Ar are the same or different at-least-divalent aromatic groups the free valencies of which are directly linked to the aromatic nuclei; and

a process for their preparation.

12. 4,189,562, Feb. 19, 1980, Polyhydroxy compounds containing urethane aryl sulfonic acid hydroxyalkyl ester groups; Dieter Dieterich, 528/75, 76, 77, 391; 558/47, 51 [IMAGE AVAILABLE]

ABSTRACT:

The instant invention is directed to polyhydroxyl compounds containing at least two hydroxyl groups and at least one sulfonic acid ester group and having an average molecular weight of from 300 to 12,000, wherein at least one hydroxyl containing compound contains a urethane aryl sulfonic

acid hydroxyalkyl ester group. The invention also relates to a process for producing these compounds and the product by the process.

13. 4,106,898, Aug. 15, 1978, Leather tanning with oligourethanes; Harro Traubel, et al., 8/94.33, 94.19C, 94.19R [IMAGE AVAILABLE]

US PAT NO: 4,106,898 [IMAGE AVAILABLE]

L3: 13 of 15

ABSTRACT:

This invention is concerned with a method of tanning or retanning leather or pelts by treating them with an aqueous liquor containing hydrophilic oligourethanes. The oligourethanes have a molecular weight of from 300 to 20,000 and they may be methylolated. The oligourethanes may be water soluble owing to their hydrophilic segments. The liquor may also contain up to an equal amount of formaldehyde or compounds which split off formaldehyde.

14. 4,073,769, Feb. 14, 1978, Esters of phosphorous acid; Erich Eimers, et al., 524/107, 109 [IMAGE AVAILABLE]

US PAT NO: 4,073,769 [IMAGE AVAILABLE]

L3: 14 of 15

ABSTRACT:

Phosphites of the general formula: ##STR1## in which N.sub.1 IS AN INTEGER;

n.sub.2 is 0 or an integer;

n.sub.3 is an integer;

At least one of the groups R is an oxetane group as hereinafter defined or a hydrocarbon radical being substituted at least by one oxetane group as hereinafter defined;

The remaining groups R are selected from alkyl, aralkyl, cycloalkyl, aryl and hetaryl groups; and

The group or groups Ar are the same or different at-least-divalent aromatic groups the free valencies of which are directly linked to the aromatic nuclei;

And a process for their preparation.

15. 3,903,112, Sep. 2, 1975, Phenyl group IIB metaloxy compounds; Peter E. Throckmorton, et al., 549/3; 540/1; 549/208, 210; 556/122, 123 [IMAGE AVAILABLE]

US PAT NO: 3,903,112 [IMAGE AVAILABLE]

L3: 15 of 15

ABSTRACT:

A class of organic metallic compounds based on the Group IIB metals are disclosed, which compounds are structurally characterized in having an alkoxide, sulfide, or selenide moiety terminally containing a carbocyclic or a heterocyclic group wherein the hetero atom is either oxygen, sulfur or selenium. These organo metallic compounds are particularly effective as catalysts in the formation of urethane polymers and additionally find general usefulness as fungicides and bactericides.

=> s (oxetane) (3a) (hydroxy or hydroxyl)

893 OXETANE

121980 HYDROXY

94613 HYDROXYL

L4 21 (OXETANE) (3A) (HYDROXY OR HYDROXYL)

=> s 14 not 13

L5 6 L4 NOT L3
=> d cit ab 15 1-6

1. 5,362,848, Nov. 8, 1994, Preparation and polymerization of initiators containing multiple oxetane rings: new routes to star polymers; Thomas G. Archibald, et al., 528/414, 415, 416, 417 [IMAGE AVAILABLE] ✓

US PAT NO: 5,362,848 [IMAGE AVAILABLE]

L5: 1 of 6

ABSTRACT:

This invention relates to novel multifunctional oxetanes, i.e., compounds having multiple oxetane groups, which are useful as initiators in the preparation of star polymers and polymer cascades containing energetic groups. In addition, this invention relates to a process for the preparation of star polymers and polymer cascades, whereby novel multifunctional oxetanes act as initiators in the formation of these polymers. The reaction of these initiators with various propagating, high-energy oxetanes, such as 3,3-bis-(azidomethyl)oxetane (BAMO) and 3-nitratomethyl-3-methyloxetane (NMMO), gives star polymers with varying molecular weights and functionalities. The star polymers and polymer cascades of the present invention are useful as binders in high-energy formulations.

2. 5,136,060, Aug. 4, 1992, Method for preparation of taxol using an oxazinone; Robert A. Holton, 549/510; 544/97; 560/30, 45; 564/183 [IMAGE AVAILABLE]

US PAT NO: 5,136,060 [IMAGE AVAILABLE]

L5: 2 of 6

ABSTRACT:

Process for the preparation of a taxol intermediate comprising contacting an alcohol with an oxazinone having the formula: ##STR1## wherein R.sub.1 is aryl, heteroaryl, alkyl, alkenyl, alkynyl or OR.sub.7 wherein R.sub.7 is alkyl, alkenyl, alkynyl, aryl or heteroaryl; R.sub.2 and R.sub.5 are independently selected from hydrogen, alkyl alkenyl, alkynyl, aryl, heteroaryl, and OR.sub.8 wherein R.sub.8 is alkyl, alkenyl, alkynyl, aryl, heteroaryl, or hydroxyl protecting group; and R.sub.3 and R.sub.6 are independently selected from hydrogen, alkyl, alkenyl, alkynyl, aryl and heteroaryl.

3. 5,015,744, May 14, 1991, Method for preparation of taxol using an oxazinone; Robert A. Holton, 549/510, 214, 215, 332, 511, 512, 513, 539; 560/27, 29, 32, 160, 162 [IMAGE AVAILABLE]

US PAT NO: 5,015,744 [IMAGE AVAILABLE]

L5: 3 of 6

ABSTRACT:

Process for the preparation of a taxol intermediate comprising contacting an alcohol with an oxazinone having the formula: ##STR1## wherein R.sub.1 is aryl, substituted aryl, alkyl, alkenyl, or alkynyl; R.sub.2 is hydrogen, ethoxyethyl, 2,2,2-trichloroethoxymethyl or other hydroxyl protecting group; and R.sub.3 is aryl, substituted aryl, alkyl, alkenyl, or alkynyl; the contacting of said alcohol and oxazinone being carried out in the presence of a sufficient amount of an activating agent under effective conditions to cause the oxazinone to react with the alcohol to form a .beta.-amido ester which is suitable for use as an intermediate in the synthesis of taxol.

4. 4,985,584, Jan. 15, 1991, Process for the production of high energy materials; Ross W. Millar, et al., 558/483; 525/333.2, 377; 558/480, 484, 485, 487 [IMAGE AVAILABLE]

US PAT NO: 4,985,584 [IMAGE AVAILABLE]

L5: 4 of 6

ABSTRACT:

A process for the production of a high energy nitrate ester involves reacting, in an inert organic solvent, a heterocyclic compound, selected from oxiranes, oxetanes, N-substituted aziridines and N-substituted azetidines, with either N.sub.2 O.sub.4 or N.sub.2 O.sub.5, and when the compound is reacted with N.sub.2 O.sub.4, oxidizing the O- or N-nitrate substituents or substituent in the product to O- or N-nitrate substituent or substituents. The remaining ring carbon atoms on the heterocyclic compound may be substituted or unsubstituted. Preferred substituent groups for the C and/or N ring atoms on the compound include alkyl, cyanoalkyl, haloalkyl, nitroalkyl, and substituted aryl. Several novel nitrate ester are also provided, including nitrated derivatives of polybutadiene, in which between 1% and 25% of the carbon atoms in the polymer are substituted by vicinal nitrate ester (--ONO.sub.2) groups.

5. 4,187,074, Feb. 5, 1980, Water-soluble cationic oligourethane resins and the use thereof for the treatment of pelts or leather; Harro Traubel, et al., 8/94.19R, 552; 521/158; 528/44, 48 [IMAGE AVAILABLE]

US PAT NO: 4,187,074 [IMAGE AVAILABLE]

L5: 5 of 6

ABSTRACT:

This invention relates to water-soluble, cationic hydrophilic oligourethanes free from isocyanate groups and containing methylol groups and to the use thereof for the tanning, pre-tanning or re-tanning of pelts or pre-tanned leather and as dyeing auxiliaries.

6. 4,106,897, Aug. 15, 1978, Leather tanning with oligourethanes; Harro Traubel, et al., 8/94.33, 94.19R [IMAGE AVAILABLE]

US PAT NO: 4,106,897 [IMAGE AVAILABLE]

L5: 6 of 6

ABSTRACT:

This invention is concerned with a method of tanning or retanning leather or pelts by treating them with an aqueous liquor containing water-soluble oligourethanes having ionic groups. The oligourethanes have a molecular weight of from 300 to 20,000 and they may be methylolated. The oligourethanes may be water-soluble owing to their ionic groups or they may contain hydrophilic segments to aid in their solubility in the aqueous liquor. The liquor may also contain up to an equal amount of formaldehyde or compounds which split off formaldehyde.
=> s (oxetane) (4a) (hydroxy or hydroxyl)

893 OXETANE

121980 HYDROXY

94613 HYDROXYL

L6 28 (OXETANE) (4A) (HYDROXY OR HYDROXYL)

=> s l6 not l5

L7 22 L6 NOT L5

=> d cit ab l7 1-22

1. 5,597,931, Jan. 28, 1997, Total synthesis of taxol and analogues thereof; Samuel J. Danishefsky, et al., 549/214, 229, 510, 511 [IMAGE AVAILABLE]

US PAT NO: 5,597,931 [IMAGE AVAILABLE]

L7: 1 of 22

ABSTRACT:

The present invention provides three basic routes for the total synthesis of taxol having the structure: ##STR1## The present invention also provides the intermediates produced in the above processes, processes for synthesizing these intermediates as well as analogues of taxol and nortaxol.

2. 5,527,924, Jun. 18, 1996, Total synthesis of taxol; Samuel J. Danishefsky, et al., 549/22, 448, 510, 511 [IMAGE AVAILABLE]

US PAT NO: 5,527,924 [IMAGE AVAILABLE]

L7: 2 of 22

ABSTRACT:

The present invention provides two basic routes for the total synthesis of taxol having the structure: ##STR1## The present invention also provides the intermediates produced in the above processes, processes for synthesizing these intermediates as well as analogs to taxol. Both the intermediates and analogs to taxol may prove to be valuable anticancer agents.

3. 5,523,424, Jun. 4, 1996, Solvent-free process for the synthesis of energetic oxetane monomers; Aslam A. Malik, et al., 549/510 [IMAGE AVAILABLE]

US PAT NO: 5,523,424 [IMAGE AVAILABLE]

L7: 3 of 22

ABSTRACT:

This invention relates to a process for the preparation of mono- and bis(azidomethyl)oxetanes. These compounds are prepared by combining a mono- or bis-X-oxetane (wherein X is, for example, a tosylate, mesylate, halogen, etc.) with an aqueous solution of a metallic azide and a phase transfer catalyst. Mono- and bis(azidomethyl)oxetanes can be polymerized to form homopolymers and copolymers with load bearing polyether backbones and highly energetic pendant groups. Such homopolymers and copolymers of the present invention are useful as energetic binders in high-energy formulations, such as propellants, explosives, and gasifiers.

4. 5,516,854, May 14, 1996, Method of producing thermoplastic elastomers having alternate crystalline structure such as polyoxetane ABA or star block copolymers by a block linking process; Robert B. Wardle, et al., 525/410 [IMAGE AVAILABLE]

US PAT NO: 5,516,854 [IMAGE AVAILABLE]

L7: 4 of 22

ABSTRACT:

A method of preparing a thermoplastic elastomer having A blocks and at least one B block, wherein said A blocks are crystalline at temperatures below about 60.degree. C. and said B block is amorphous at temperatures above about -20.degree. C., said A blocks each being polyethers derived from monomers of oxetane and its derivatives and/or tetrahydrofuran and its derivatives, the method comprising: providing monofunctional hydroxyl terminated A blocks which are

crystalline at temperatures below about 60.degree. C. and separately providing di-, tri- or tetrafunctional hydroxyl terminated B blocks which are amorphous at temperatures above about -20.degree. C., end-capping said A blocks by separately reacting said A blocks with a difunctional diisocyanate in which one isocyanate moiety is at least about five times as reactive with the terminal hydroxyl group of the A blocks as the other isocyanate moiety, whereby the more reactive isocyanate moiety tends to react with the terminal hydroxyl group of the A blocks, leaving the less reactive isocyanate moiety free and unreacted, and adding di-, tri- or tetrafunctional B block to the end-capped A blocks at approximately the stoichiometric ratios that they are intended to be present in the thermoplastic elastomer such that the free and unreacted isocyanate moiety on the end-capped A block reacts with a functional moiety of the B block to produce ABA or A.sub.n B thermoplastic elastomers.

5. 5,488,116, Jan. 30, 1996, Total synthesis of taxol and analogues thereof; Samuel J. Danishefsky, et al., 549/214, 229, 230, 510, 511 [IMAGE AVAILABLE]

US PAT NO: 5,488,116 [IMAGE AVAILABLE]

L7: 5 of 22

ABSTRACT:

The present invention provides three basic routes for the total synthesis of taxol having the structure: ##STR1## The present invention also provides the intermediates produced in the above processes, processes for synthesizing these intermediates as well as analogues of taxol and nortaxol.

6. 5,418,296, May 23, 1995, Capping of anionic polymers with oxetanes; Carl L. Willis, et al., 525/385, 332.8, 332.9, 333.1, 333.2, 333.3 [IMAGE AVAILABLE]

US PAT NO: 5,418,296 [IMAGE AVAILABLE]

L7: 6 of 22

ABSTRACT:

Living anionic polymers of unsaturated monomers are conveniently capped with oxetane or an alkyl substituted **oxetane** to provide terminal primary **hydroxyl** groups. The hydroxyl capped polymers are useful in making coatings, sealants, binders, and block copolymers with polyesters, polyamides, and polycarbonates.

7. 5,416,225, May 16, 1995, Total synthesis of taxol; Samuel J. Danishefsky, et al., 549/341, 342 [IMAGE AVAILABLE]

US PAT NO: 5,416,225 [IMAGE AVAILABLE]

L7: 7 of 22

ABSTRACT:

The present invention provides two basic routes for the total synthesis of taxol having the structure: ##STR1## The present invention also provides the intermediates produced in the above processes, processes for synthesizing these intermediates as well as analogs to taxol. Both the intermediates and analogs to taxol may prove to be valuable anticancer agents.

8. 5,391,637, Feb. 21, 1995, Capping of anionic polymers with oxetanes; Carl L. Willis, et al., 525/385, 332.8, 332.9, 333.1, 333.2, 333.3 [IMAGE AVAILABLE]

AVAILABLE]

US PAT NO: 5,391,637 [IMAGE AVAILABLE]

L7: 8 of 22 ✓

ABSTRACT:

Living anionic polymers of unsaturated monomers are conveniently capped with oxetane or an alkyl substituted **oxetane** to provide terminal primary **hydroxyl** groups. The hydroxyl capped polymers are useful in making coatings, sealants, binders, and block copolymers with polyesters, polyamides, and polycarbonates.

9. 5,310,722, May 10, 1994, Synergistic composition comprising a sulfonylurea and a thiadiazolo[3,4-a]py; Willy Maurer, et al., 504/134, 137 [IMAGE AVAILABLE]

US PAT NO: 5,310,722 [IMAGE AVAILABLE]

L7: 9 of 22

ABSTRACT:

The present invention relates to a synergistic composition comprising a herbicidally active gulfonylurea of formula I ##STR1## wherein Z is a substituted phenyl, thiophenyl, benzyl, pyridinyl, pyrazinyl, hetero-fused phenyl, or alkylsulfonylamino radical;

M is hydrogen; or C.sub.1 -C.sub.4 alkyl; and Het is a substituted five- or six-membered heterocycle having 2 or 3 nitrogen atoms, and a synergistically effective amount of a 5,6,7,8-tetrahydro-1-H,3H-(1,3,4)-thiadiazolo[3,4-a]-pyridazine or 7,8-dihydro-1-H,3H-(1,3,4)-thiadiazolo[3,4-a]pyridazine of formula II ##STR2## wherein X is oxygen; or sulfur;

A--B is --CH.sub.2 --CH.sub.2 --; or --CH.dbd.CH--; and Phe is a substituted phenyl radical.

The composition according to the invention is suitable for selective weed control in crops of useful plants, especially in cereals, maize, rice or soybeans. The invention relates also to a method of controlling weeds in crops of useful plants, especially in cereals, maize, rice or soybeans, and to the use of the novel composition.

10. 5,214,166, May 25, 1993, Method of synthesizing nitrate alkyl oxetanes; Gerald E. Manser, et al., 549/510 [IMAGE AVAILABLE]

US PAT NO: 5,214,166 [IMAGE AVAILABLE]

L7: 10 of 22 X

ABSTRACT:

Nitrate alkyl oxetanes are synthesized directly from the corresponding hydroxy alkyl oxetanes by nitrating the **hydroxy** alkyl **oxetane** under non-acidic anhydrous conditions. A **hydroxy** alkyl **oxetane** is reacted with an anhydrous nitrate ester of a carboxylic acid at temperatures below about 10.degree. C. The product of the method, nitrate alkyl oxetane, is produced in relatively high yield without opening of the oxetane ring.

11. 5,099,058, Mar. 24, 1992, N, N-disubstituted oligourethanes and polyurethanes, a process for their preparation, and their use in the production of plastics; Josef Sanders, et al., 560/26; 556/420, 421; 558/276; 560/115, 148, 158, 160 [IMAGE AVAILABLE]

US PAT NO: 5,099,058 [IMAGE AVAILABLE]

L7: 11 of 22

ABSTRACT:

The present invention relates to N,N-disubstituted compounds containing urethane groups and terminal hydroxyl groups corresponding to the general formula ##STR1## wherein X is the residue of a strong memobasic or polybasic acid remaining after dissociation of the proton or protons of said acid or a hydroxyl group;

Y is an n-functional hydrocarbon group having a molecular weight of from about 15 to about 8000 (preferably from about 300 to about 4000) and optionally interrupted by oxygen, sulfur, or silicon atoms, or by ester, carbonate, urea, N-monosubstituted urethane, or N,N-disubstituted urethane groups;

1.sub.R hydrogen or a hydrocarbon group having a molecular weight of from about 15 to about 200;

2.sub.R is the radical of an alkylating or arylating agent; and is an integer of from 2 to about 6.

The present invention further relates to a process for preparing such compounds and to a method for using such compounds in the production of plastics.

12. 4,997,974, Mar. 5, 1991, Bisphenol derivatives and polymers thereof; Holger Lutjens, et al., 560/57; 526/311, 313; 528/193 [IMAGE AVAILABLE]

US PAT NO: 4,997,974 [IMAGE AVAILABLE]

L7: 12 of 22

ABSTRACT:

Bisphenol derivatives corresponding to formula (I) ##STR1## in which

R.sup.1 is hydrogen, C.sub.1-4 alkyl,

R.sup.2 is C.sub.1-12 alkyl,

R.sup.3 is C.sub.1-12 alkyl,

X is C.sub.1-12 alkylene,

Y is C.sub.1-12 alkylene,

Z is hydrogen, ##STR2## and polymers produced therefrom containing structural units corresponding to formula (II) ##STR3## in which R.sup.1, R.sup.2, R.sup.3, X, Y and Z are as defined above.

13. 4,806,613, Feb. 21, 1989, Method of producing thermoplastic elastomers having alternate crystalline structure for use as binders in high-energy compositions; Robert B. Wardle, 528/59; 149/19.4, 19.6; 528/65 [IMAGE AVAILABLE]

US PAT NO: 4,806,613 [IMAGE AVAILABLE]

L7: 13 of 22

ABSTRACT:

A method of preparing a thermoplastic elastomer having A blocks and at least one B block, wherein said A blocks are crystalline at temperatures below about 60.degree. C. and said B block(s) is amorphous at temperatures above about -20.degree. C., said A blocks each being polyethers derived from monomers of oxetane and its derivatives and/or tetrahydrofuran and its derivatives, the method comprising providing hydroxyl terminated A blocks which are crystalline at temperatures below about 60.degree. C. and separately providing hydroxyl terminated B blocks which are amorphous at temperatures above about -20.degree. C.,

end-capping said A blocks and said B blocks by separately reacting each of said A blocks and B blocks with a diisocyanate in which one isocyanate moiety is at least about five times as reactive with the terminal hydroxyl groups of each of the blocks as the other isocyanate moiety, whereby the more reactive isocyanate moiety tends to react with terminal hydroxyl groups of the blocks, leaving the less reactive

isocyanate moiety free and unreacted, mixing said end-capped A blocks and said end-capped B blocks together at approximately the stoichiometric ratios that they are intended to be present in the thermoplastic elastomer, and reacting said mixture with a linking compound having two isocyanate-reactive groups which are sufficiently unhindered to react with the free isocyanate groups of said end-capped polymer.

14. 4,764,586, Aug. 16, 1988, Internally-plasticized polyethers from substituted oxetanes; Gerald E. Manser, et al., 528/362; 149/19.4, 19.6; 528/417 [IMAGE AVAILABLE] ✓

US PAT NO: 4,764,586 [IMAGE AVAILABLE]

L7: 14 of 22

ABSTRACT:

Internally plasticized elastomeric binders for projectile propellants are cured polyethers containing THF, CYMMO plus BMEMO, BEEMO and/or OMMO mer units. The polyethers are fluid at room temperature and are miscible with nitrate ester plasticizers. Propellant binders prepared from these polyethers are curable, have low T.sub.g 's, good mechanical properties, and I.sub.sp 's comparable to PEG-based binders.

15. 4,443,605, Apr. 17, 1984, 7.beta.-Arylalkyl-6.alpha., 7.alpha.-oxymethylene-3-methoxy or 3-hydroxy-4, 5.alpha.-epoxy-17 methyl or 17-cycloalkyl-methyl morphinans; Michael P. Kotick, et al., 546/39, 44 [IMAGE AVAILABLE]

US PAT NO: 4,443,605 [IMAGE AVAILABLE]

L7: 15 of 22

ABSTRACT:

Disclosed are 7.beta.-arylalkyl substituted morphinan compounds characterized by the formula: ##STR1## In the above formula, R is H or methyl, R.sub.1 is methyl, cyclopropylmethyl or cyclobutylmethyl and n is 2 to 5.

16. 4,323,501, Apr. 6, 1982, Esters of phosphorous acid; Erich Eimers, et al., 549/218; 987/40, 219 [IMAGE AVAILABLE]

US PAT NO: 4,323,501 [IMAGE AVAILABLE]

L7: 16 of 22

ABSTRACT:

Phosphites of the general formula: ##STR1## in which n.sub.1 is an integer; n.sub.2 is 0 or an integer; n.sub.3 is an integer; at least one of the groups R is an oxetane group as hereinafter defined or a hydrocarbon radical being substituted at least by one oxetane group as hereinafter defined; the remaining groups R are selected from alkyl, aralkyl, cycloalkyl, aryl and hetaryl groups; and the group or groups Ar are the same or different at-least-divalent aromatic groups the free valencies of which are directly linked to the aromatic nuclei; and a process for their preparation.

17. 4,189,562, Feb. 19, 1980, Polyhydroxy compounds containing urethane aryl sulfonic acid hydroxyalkyl ester groups; Dieter Dieterich, 528/75, 76, 77, 391; 558/47, 51 [IMAGE AVAILABLE]

US PAT NO: 4,189,562 [IMAGE AVAILABLE]

L7: 17 of 22

ABSTRACT:

The instant invention is directed to polyhydroxyl compounds containing at least two hydroxyl groups and at least one sulfonic acid ester group and having an average molecular weight of from 300 to 12,000, wherein at least one hydroxyl containing compound contains a urethane aryl sulfonic acid hydroxyalkyl ester group. The invention also relates to a process for producing these compounds and the product by the process.

18. 4,106,898, Aug. 15, 1978, Leather tanning with oligourethanes; Harro Traubel, et al., 8/94.33, 94.19C, 94.19R [IMAGE AVAILABLE]

US PAT NO: 4,106,898 [IMAGE AVAILABLE]

L7: 18 of 22

ABSTRACT:

This invention is concerned with a method of tanning or retanning leather or pelts by treating them with an aqueous liquor containing hydrophilic oligourethanes. The oligourethanes have a molecular weight of from 300 to 20,000 and they may be methylolated. The oligourethanes may be water soluble owing to their hydrophilic segments. The liquor may also contain up to an equal amount of formaldehyde or compounds which split off formaldehyde.

19. 4,073,769, Feb. 14, 1978, Esters of phosphorous acid; Erich Eimers, et al., 524/107, 109 [IMAGE AVAILABLE]

US PAT NO: 4,073,769 [IMAGE AVAILABLE]

L7: 19 of 22

ABSTRACT:

Phosphites of the general formula: ##STR1## in which N.sub.1 IS AN INTEGER;

n.sub.2 is 0 or an integer;

n.sub.3 is an integer;

At least one of the groups R is an oxetane group as hereinafter defined or a hydrocarbon radical being substituted at least by one oxetane group as hereinafter defined;

The remaining groups R are selected from alkyl, aralkyl, cycloalkyl, aryl and hetaryl groups; and

The group or groups Ar are the same or different at-least-divalent aromatic groups the free valencies of which are directly linked to the aromatic nuclei;

And a process for their preparation.

20. 3,952,015, Apr. 20, 1976, Macrocyclic compounds having oxa and aza linkages in the ring and containing spirooxetane groups; Carl George Krespan, 540/466, 453; 548/950; 549/332 [IMAGE AVAILABLE]

US PAT NO: 3,952,015 [IMAGE AVAILABLE]

L7: 20 of 22

ABSTRACT:

Compound having the formula ##EQU1## WHEREIN Y is --XCH.sub.2 CH.sub.2 --X--, --X(CH.sub.2 CH.sub.2 X).sub.2 or ##EQU2## p is 1 to 4, and each X is O or NH, N-alkanoyl, N-benzoyl wherein the benzene ring is optionally substituted with --NO.sub.2, --NH.sub.2, or --CH.sub.3, N-alkyl or N-.beta.-hydroxyalkyl each of up to 8 carbons and wherein the total

number of N is 1 to 3 are disclosed. The compounds can be polymerized by opening of the oxetane ring in the presence of electrophilic agents, or the oxetane ring can be hydrolyzed to a dihydroxy group and reacted with diacid halides to form polyesters or with diisocyanates to form polyurethanes. Both monomers and polymers complex metal ions and can be used to separate such ions from solutions.

21. 3,903,112, Sep. 2, 1975, Phenyl group IIB metaloxy compounds; Peter E. Throckmorton, et al., 549/3; 540/1; 549/208, 210; 556/122, 123 [IMAGE AVAILABLE]

US PAT NO: 3,903,112 [IMAGE AVAILABLE]

L7: 21 of 22

ABSTRACT:

A class of organic metallic compounds based on the Group IIB metals are disclosed, which compounds are structurally characterized in having an alkoxide, sulfide, or selenide moiety terminally containing a carbocyclic or a heterocyclic group wherein the hetero atom is either oxygen, sulfur or selenium. These organo metallic compounds are particularly effective as catalysts in the formation of urethane polymers and additionally find general usefulness as fungicides and bactericides.

22. 3,890,306, Jun. 17, 1975, Novel acetals and methods for their preparation; Anthony W. McCollum, 548/448; 526/270; 549/378, 435, 448, 477 [IMAGE AVAILABLE]

US PAT NO: 3,890,306 [IMAGE AVAILABLE]

L7: 22 of 22

ABSTRACT:

1,1,4,4-Bis(ethylenedioxy)-3,3-dimethyl-1-butene (referred to as ketene acetal) is prepared by reacting ethylene glycol with tetrahydro-2-isopropyl-6,6-dimethylfuro-(2,3-d)-1,3-dioxol-5-ol in the presence of an acid catalyst at a temperature of from about 110.degree. to 170.degree.C. The water of reaction is preferably removed by the use of a solvent which forms an azeotrope that boils between 110.degree. to 170.degree.C. In an alternative two-step process, tetrahydro-2-isopropyl-6,6-dimethylfuro-(2,3-d)-1,3-dioxol-5-ol is reacted with ethylene glycol in the presence of an acid catalyst at a temperature of from about 60.degree. to 110.degree.C. to form 2-hydroxy-3,3-dimethylsuccinaldehyde bis(ethylenedioxy)acetal (referred to as hydroxy acetal). The 2-hydroxy-3,3-dimethylsuccinaldehyde bis(ethylenedioxy)acetal is then heated to a temperature of from about 110.degree. to 170.degree.C. in the presence of an acid catalyst to give 1,1,4,4-bis(ethylenedioxy)-3,3-dimethyl-1-butene. The water from the two-step process is preferably removed from the reaction as it is formed through the use of an azeotropic solvent. The ketene acetal is useful generally because of its reactive nature and for its ability to form **oxetane** polymers and polyesters. The **hydroxy** acetal is useful as a gel hardener, as a cross-linking agent for use with cellulose derivatives and polyols, and as a chemical intermediate.

=> s (oxetane) (5a) (hydroxy or hydroxyl)

893 OXETANE

121980 HYDROXY

94613 HYDROXYL

L8 39 (OXETANE) (5A) (HYDROXY OR HYDROXYL)

=> s 18 not 16

L9 11 L8 NOT L6

=> s 14 or 16

L10 28 L4 OR L6
=> s l8 not l10
L11 11 L8 NOT L10
=> d cit ab l11 1-11

1. 5,532,363, Jul. 2, 1996, Heteroaryl substituted oxazinone compounds for the preparation of taxol; Robert A. Holton, 544/97; 549/510, 511, 512, 513; 560/30, 45; 564/183 [IMAGE AVAILABLE]

US PAT NO: 5,532,363 [IMAGE AVAILABLE]

L11: 1 of 11

ABSTRACT:

Process for the preparation of a taxol intermediate comprising contacting an alcohol with an oxazinone having the formula: ##STR1## wherein R.sub.1 is aryl, heteroaryl, alkyl, alkenyl, alkynyl or OR.sub.7 wherein R.sub.7 is alkyl, alkenyl, alkynyl, aryl or heteroaryl; R.sub.2 and R.sub.5 are independently selected from hydrogen, alkyl alkenyl, alkynyl, aryl, heteroaryl, and OR.sub.8 wherein R.sub.8 is alkyl, alkenyl, alkynyl, aryl, heteroaryl, or hydroxyl protecting group; and R.sub.3 and R.sub.6 are independently selected from hydrogen, alkyl, alkenyl, alkynyl, aryl and heteroaryl.

2. 5,519,151, May 21, 1996, Process for preparing polyfluorooxetanes; Viacheslav A. Petrov, et al., 549/510, 511 [IMAGE AVAILABLE]

US PAT NO: 5,519,151 [IMAGE AVAILABLE]

L11: 2 of 11

ABSTRACT:

This invention concerns a process for the preparation of polyfluorooxetanes by the reaction of fluoroketones or fluoroepoxides with haloethylenes in the presence of a Lewis acid catalyst. Polyfluorooxetanes are useful as solvents and plasticizers having high thermal stability.

3. 5,430,160, Jul. 4, 1995, Preparation of substituted isoserine esters using .beta.-lactams and metal or ammonium alkoxides; Robert A. Holton, 549/510, 511 [IMAGE AVAILABLE]

US PAT NO: 5,430,160 [IMAGE AVAILABLE]

L11: 3 of 11

ABSTRACT:

A process for preparing N-acyl, N-sulfonyl and N-phosphoryl substituted isoserine esters in which a metal or an ammonium alkoxide is reacted with a .beta.-lactam.

4. 5,371,075, Dec. 6, 1994, Trithiabicyclo[2,2,2]octanes; John E. Casida, et al., 514/150, 434; 549/4, 15 [IMAGE AVAILABLE]

US PAT NO: 5,371,075 [IMAGE AVAILABLE]

L11: 4 of 11

ABSTRACT:

Bicyclo-[2,2,1]-heptanes, bicyclo-[2,2,2]-octanes and bicyclo-[2,2,3]-nonanes having 2 or 3 ring hetero atoms selected from O, S and N, substituted at the 1-position by a 4-alkynylphenyl group and at the 4-position and optionally at the 3 and/or 5-position are valuable pesticides, particularly insecticides and acaracides. The compounds may be prepared by reacting an alkyne with the corresponding 4-iodophenyl substituted compound or by debromination of the corresponding

4-dibromomethylphenyl substituted compound.

5. 5,354,865, Oct. 11, 1994, Phenylmethyl derivatives having lipoxxygenase inhibitory activity; Joseph F. Dellaria, et al., 546/158; 544/105; 548/304.7 [IMAGE AVAILABLE]

US PAT NO: 5,354,865 [IMAGE AVAILABLE]

L11: 5 of 11

ABSTRACT:

Compounds of the structure ##STR1## where Ar is optionally substituted carbocyclic aryl, 5- or 6-membered heterocyclic aryl, 10-membered bicyclic heterocyclic aryl containing one or two nitrogen atoms, 9- or 10-membered heterocyclic containing one or two nitrogen atoms and optionally containing a further nitrogen or oxygen atom and one oxo or thioxo substituent, benzo[b]furyl, benzo[b]thienyl, A.sub.1 is propynylene, methylene, or a valence bond, X is O, S, SO.sub.2, or NR.sub.2, Y is selected from alkyl, haloalkyl, alkoxy, halogen, and hydrogen, A.sub.2 is selected from ##STR2## and methylene where Z is OR.sub.5 or NHR.sub.5 where R.sub.5 is hydrogen or alkyl, R.sub.1 is hydrogen, alkyl, or OR.sub.5, and m and n are integers having a value of 1 or 2 are potent inhibitors of lipoxxygenase enzymes and thus inhibit the biosynthesis of leukotrienes. These compounds are useful in the treatment or amelioration of allergic and inflammatory disease states.

6. 5,157,029, Oct. 20, 1992, Pesticidal compounds; John E. Casida, et al., 514/150, 434; 549/4, 15 [IMAGE AVAILABLE]

US PAT NO: 5,157,029 [IMAGE AVAILABLE]

L11: 6 of 11

ABSTRACT:

Bicyclo-[2,2,1]-heptanes, bicyclo-[2,2,2]-octanes and bicyclo-[2,2,3]-nonanes having 2 or 3 ring hetero atoms selected from O, S and N, substituted at the 1-position by a 4-alkynylphenyl group and at the 4-position and optionally at the 3 and/or 5-position are valuable pesticides, particularly insecticides and acaracides. The compounds may be prepared by reacting an alkyne with the corresponding 4-iodophenyl substituted compound or by debromination of the corresponding 4-dibromomethylphenyl substituted compound.

7. 5,057,508, Oct. 15, 1991, Pesticidal compounds; John E. Casida, et al., 514/149, 432, 434, 452, 456; 549/15, 23, 214, 215, 363, 397 [IMAGE AVAILABLE]

US PAT NO: 5,057,508 [IMAGE AVAILABLE]

L11: 7 of 11

ABSTRACT:

Bicyclo-[2,2,1]-heptanes, bicyclo-[2,2,2]-octanes and bicyclo[2,2,3]-nonanes having 2 or 3 ring hetero atoms selected from O, S and N, substituted at the 1-position by a 4-alkynylphenyl group and at the 4-position and optionally at the 3 and/or 5-position are valuable pesticides, particularly insecticides and acaracides. The compounds may be prepared by reacting an alkyne with the corresponding 4-iodophenyl substituted compound or by debromination of the corresponding 4-dibromomethylphenyl substituted compound.

8. 4,965,257, Oct. 23, 1990, Pesticidal compounds; John E. Casida, et al., 514/149, 452; 549/214, 215, 332, 337, 360, 363 [IMAGE AVAILABLE]

ABSTRACT:

Bicyclo-[2,2,1]-heptanes, bicyclo-[2,2,2]-octanes and bicyclo-[2,2,3]-nonanes, having 2 or 3 ring hetero atoms selected from O, S and N, substituted at the 1-position by a 4-alkynylphenyl group and at the 4-position and optionally at the 3 and/or 5-position are valuable pesticides, particularly insecticides and acaricides. The compounds may be prepared by reacting an alkyne with the corresponding 4-iodophenyl substituted compounds or by debromination of the corresponding 4-dibromomethylphenyl substituted compound.

9. 4,942,173, Jul. 17, 1990, Pesticidal compounds; John E. Casida, et al., 514/452; 549/214, 336, 360, 363 [IMAGE AVAILABLE]

ABSTRACT:

The present invention relates to a compound of the formula (I): ##STR1## wherein R is C.sub.2-10 alkyl, alkenyl or alkynyl, each optionally substituted by or methyl substituted by cyano, C.sub.3-4 cycloalkyl, halo, C.sub.1-4 alkoxy or a group S(O)_m R.sup.4 where R.sup.4 is C.sub.1-4 alkyl and m is 0, 1 or 2, or R is C.sub.3-10 cycloalkyl, C.sub.4-10 cycloalkenyl or phenyl, each optionally substituted by C.sub.1-4 alkoxy, C.sub.1-3 alkyl, C.sub.2-4 alkynyl, halo, cyano or a group S(O)_m R.sup.4 as defined hereinbefore; R.sup.1 is halo, C.sub.1-3 alkyl, C.sub.2-3 alkenyl or alkynyl each optionally substituted by halo, cyano, C.sub.1-4 alkoxy, alkyl carbalkoxy containing up to 6 carbon atoms, a group S(O)_m R.sup.4 as defined hereinbefore or alkynyl substituted by tri-C.sub.1-4 alkylsilyl, or R.sup.1 is cyano, spiro-cyclopropyl, gem dimethyl, gem dicyano, gem diethynyl, oxo or methylene optionally substituted by cyano of C.sub.1-3 alkyl optionally substituted by fluorine, or R.sup.1 and R and the carbon atoms to which they are attached form a C.sub.5-7 carbocyclic ring optionally substituted by halo, C.sub.1-3 alkyl or alkoxy or C.sub.2-3 alkenyl, R.sup.2 is phenyl substituted by an C.sub.2-3 alkynyl group or by a tri-C.sub.1-4 alkylsilylalkynyl group and R.sup.3 is hydrogen, C.sub.1-3 alkyl, C.sub.2-3 alkenyl or alkynyl each optionally substituted by cyano, C.sub.1-4 alkylthio, C.sub.1-4 alkoxy or halo, or R.sup.3 is cyano or halo, its use in medicine, pharmaceutical compositions containing it and its preparation.

10. 4,213,969, Jul. 22, 1980, Phosphonous acid derivatives, processes for their preparation and their use in combatting microorganisms; Eric K. Baylis, et al., 514/7; 260/1; 530/330, 331; 562/14, 15; 930/190, 290; 987/139 [IMAGE AVAILABLE]

ABSTRACT:

Phosphonous acid derivatives of the general formula I ##STR1## or the corresponding zwitterion form, in which R, R.sub.1, R.sub.2 and R.sub.3 have the meanings given hereinafter, are valuable microbicides. They are being manufactured according to known methods of peptide synthesis and may be used to protect plants from the attack of plant-pathogenic bacteria and fungi.

11. 3,894,060, Jul. 8, 1975, Anthraquinone compounds; Volker Hederich,

et al., 552/241; 544/147, 156; 546/204, 207; 548/517, 528; 549/510, 511;
552/224, 235, 261 [IMAGE AVAILABLE]

US PAT NO: 3,894,060 [IMAGE AVAILABLE]

L11: 11 of 11

ABSTRACT:

New anthraquinone compounds of the formulae ##SPC1##

And ##SPC2##

In which

X.sub.1 denotes a hydroxyl or amino group,

X.sub.2 denotes a hydroxyl, amino, alkylamino, cycloalkylamino,
arylamino, acylamino, alkylmercapto or arylmercapto group,

Y represents hydrogen, halogen, alkylmercapto or arylmercapto radicals,

R represents an alkyl radical,

Hal represents chlorine, bromine or iodine and

Z represents hydrogen or an acyl radical,

As well as their manufacture and use for dyeing and printing synthetic
fibre materials.

=> s (oxetane) (p) (hydroxy or hydroxyl)

893 OXETANE

121980 HYDROXY

94613 HYDROXYL

L12 203 (OXETANE) (P) (HYDROXY OR HYDROXYL)

=> s l6 or l11

L13 39 L6 OR L11

=> s l12 not l13

L14 164 L12 NOT L13

=> s l14 and (epoxy or epoxide or diepoxy or diepoxide or oxirane)

99634 EPOXY

19327 EPOXIDE

940 DIEPOXY

2332 DIEPOXIDE

5049 OXIRANE

L15 95 L14 AND (EPOXY OR EPOXIDE OR DIEPOXY OR DIEPOXIDE OR OXIRAN
E)

=> s l15 and onium salt

3349 ONIUM

232293 SALT

1073 ONIUM SALT

(ONIUM(W) SALT)

L16 0 L15 AND ONIUM SALT

=> s l15 and (iodonium or sulfonium or sulphonium)

1170 IODONIUM

5070 SULFONIUM

971 SULPHONIUM

L17 1 L15 AND (IODONIUM OR SULFONIUM OR SULPHONIUM)

=> d cit

1. 4,032,565, Jun. 28, 1977, Cross-linkable compounds; David John
Kilpatrick, et al., 560/147; 8/128.3; 560/159, 169, 182 [IMAGE AVAILABLE]

=> s l15 and l1

L18 2 L15 AND L1

=> d cit l18 1-2

1. 5,463,084, Oct. 31, 1995, Photocurable silicone oxetanes; James V.
Crivello, et al., 549/214; **522/168**, **172**; 549/510, 511 [IMAGE
AVAILABLE]

528/415; 502/159; **528/405**, **412** [IMAGE AVAILABLE]

US PAT NO: 5,527,880 [IMAGE AVAILABLE]

L19: 4 of 13

ABSTRACT:

Polyurethane foam-supported double metal cyanide (DMC) catalysts are disclosed as useful catalysts for **epoxide** polymerization. The foam-supported catalysts are easy to prepare, and are more active and show reduced induction periods compared with conventional powdered DMC catalysts. The catalysts of the invention can be recovered from the **epoxide** polymer products and can be reused to catalyze additional **epoxide** polymerizations.

5. 5,523,386, Jun. 4, 1996, Plastic foam-supported double metal cyanide catalysts for polyether polyol synthesis; Bi Le-Khac, **528/415**; 502/159; **528/405**, **412** [IMAGE AVAILABLE]

US PAT NO: 5,523,386 [IMAGE AVAILABLE]

L19: 5 of 13

ABSTRACT:

Foam-supported double metal cyanide (DMC) catalysts are disclosed as useful catalysts for **epoxide** polymerization. Polyurethane foam-supported catalysts of the invention are more active and show reduced induction periods compared with conventional powdered DMC catalysts. The catalysts of the invention can be recovered from the **epoxide** polymer products and can be reused to catalyze additional **epoxide** polymerizations.

6. 5,502,137, Mar. 26, 1996, Polyether glycols and alcohols derived from 3,4-**epoxy**-1-butene, tetrahydrofuran and an initiator; James C. Matayabas, Jr., et al., 528/393, **417** [IMAGE AVAILABLE]

US PAT NO: 5,502,137 [IMAGE AVAILABLE]

L19: 6 of 13

ABSTRACT:

Disclosed are novel polyether compounds obtained by the reaction or polymerization of 3,4-**epoxy**-1-butene in the presence of tetrahydrofuran, an acidic catalyst and a nucleophilic initiator compound. The polyether compounds comprise m units of residue (1), n units of residue (2), and p units of residue (3) wherein (i) residues (1), (2) and (3) have the structures: ##STR1## (ii) the total value of $m+n+p$ is 5 to 70; (iii) the value of $n/(m+n+p)$ is in the range of 0.2 to 0.4, i.e., residue (2) constitutes from 20 to 40 mole percent of the total moles of residues (1), (2) and (3); and (iv) at least 98 percent of the terminal groups have the structure: ##STR2##

7. 5,466,759, Nov. 14, 1995, Polyether glycols and alcohols derived from 3,4-**epoxy**-1-butene; James C. Matayabas, Jr., et al., 525/403, 409; **528/417**, **421**; 568/616, 617 [IMAGE AVAILABLE]

US PAT NO: 5,466,759 [IMAGE AVAILABLE]

L19: 7 of 13

ABSTRACT:

Disclosed are novel saturated polyether compounds comprised of n units of residue (1) and m units of residue (2), wherein (i) residues (1) and (2) have the structures: ##STR1## (ii) the total value of $n+m$ is 2 to 70 and $m/(n+m)$ is 0.05 to 0.98; (ii) at least 98 percent of the terminal hydroxyl groups of the polyether have the structure: ##STR2## The

polyethers are obtained by first polymerizing 3,4-**epoxy**-1-butene to produce unsaturated polyether precursors comprising residues (1A) and (2A) having the structures: **STR3** and then hydrogenating the unsaturated polyether precursors. The hydrogenation advantageously is performed in the presence of a nickel hydrogenation catalyst.

8. 5,426,174, Jun. 20, 1995, Hydroxy-functionalized polyoxyalkylene ether compositions derived from mixtures of C.sub.4 epoxides; Daniel B. Pourreau, et al., **528/419**, **413**; 568/608, 618, 620, 622 [IMAGE AVAILABLE]

US PAT NO: 5,426,174 [IMAGE AVAILABLE]

L19: 8 of 13

ABSTRACT:

Hydroxy-functionalized polyoxybutylene ether compositions having improved thermal and oxidative stability are prepared by the polymerization of a mixture of C.sub.4 epoxides in the presence of an organic initiator containing hydroxy groups.

9. 5,313,000, May 17, 1994, Polymerization of cyclic ethers; Malcolm J. Stewart, 568/613; **528/408**, **409**, **417**, **420**, **421**; 552/11; 558/483, 484, 485; 568/614, 615, 620, 622, 623, 624 [IMAGE AVAILABLE]

US PAT NO: 5,313,000 [IMAGE AVAILABLE]

L19: 9 of 13

ABSTRACT:

This invention relates to the production of **hydroxy**-terminated polymers in the 2,000-20,000 MW range suitable for use as prepolymers in curing reactions with isocyanates to produce elastomers. The process involves the continuous addition over periods of 25-50 hours of an **oxirane** (monoepoxide) or a mixture of an **oxirane** and an **oxetane** to a reaction mixture, consisting of stoichiometric excesses of oxonium ion-forming catalyst such as BF.sub.3-etherate and a diol initiator dissolved in an inert solvent. Under these conditions, chain extension of the diol occurs and the formation of cyclic oligomers and other impurities is minimised. The mole ratio of the initiator to catalyst is maintained at above 10:1 to suppress the formation of cationic terminal species on the growing polymer chain.

10. 4,965,342, Oct. 23, 1990, High molecular weight polymers and copolymers of 3-hydroxyoxetane and derivatives thereof; Edwin J. Vandenberg, et al., **528/417**, **410** [IMAGE AVAILABLE]

US PAT NO: 4,965,342 [IMAGE AVAILABLE]

L19: 10 of 13

ABSTRACT:

High molecular weight ($M_w > 25,000$, preferably $> 50,000$; n_{inh} up to 3) atactic poly (3-hydroxyoxetane) (PHO) are made by polymerizing the trimethylsilyl ether of 3-hydroxyoxetane with a coordination catalyst, or preferably with a cationic catalyst such as $i\text{-Bu.sub.3Al-0.7H.sub.2O}$, followed by hydrolysis. The new polymer is atactic, highly crystalline, has a melting point of 155.degree. C., is devoid of measurable end groups, has a two-peak $^{13}\text{C-NMR}$, and can be readily compression molded at 200.degree. C. to a film which can be drawn at room temperature to give enhanced strength. Isotactic high molecular weight PHO ($mp = 223.\text{degree. C.}$; $\Delta H_{sub.f}$

2. 4,508,916, Apr. 2, 1985, Curable substituted urethane acrylates; Richard G. Newell, et al., 556/420; **522/96**, **97**; 526/240, 247; 560/26, 115, 158 [IMAGE AVAILABLE]
=> s 115 and 12
L19 13 L15 AND L2
=> d cit ab 119 1-13

1. 5,596,075, Jan. 21, 1997, Polyurethane foam-supported double metal cyanide catalysts for polyol synthesis; Bi Le-Khac, 528/425, **405**, **412**, **415** [IMAGE AVAILABLE]

US PAT NO: 5,596,075 [IMAGE AVAILABLE]

L19: 1 of 13

ABSTRACT:

Polyurethane foam-supported double metal cyanide (DMC) catalysts are disclosed as useful catalysts for **epoxide** polymerization. The foam-supported catalysts are easy to prepare, and are more active and show reduced induction periods compared with conventional powdered DMC catalysts. The catalysts of the invention can be recovered from the **epoxide** polymer products and can be reused to catalyze additional **epoxide** polymerizations.

2. 5,536,883, Jul. 16, 1996, Highly active double metal cyanide catalysts and **epoxide** polymerization; Bi Le-Khac, 568/620; **528/412** [IMAGE AVAILABLE]

US PAT NO: 5,536,883 [IMAGE AVAILABLE]

L19: 2 of 13

ABSTRACT:

Highly active double metal cyanide (DMC) catalysts are disclosed. The catalysts comprise a DMC complex, and organic complexing agent, and from about 5 to about 80 wt. %, based on the amount of catalyst, of a polyether having a number average molecular weight greater than about 500. A method of preparing the catalysts is also disclosed. The catalysts are easy to prepare, have exceptional activity, and are readily removed, if desired, from polymer products. The catalysts are used for polymerizing epoxides.

3. 5,536,809, Jul. 16, 1996, Polyether glycols and alcohols derived from 3,4-**epoxy**-1-butene, tetrahydrofuran and an initiator; James C. Matayabas, Jr., et al., 528/393, **417** [IMAGE AVAILABLE]

US PAT NO: 5,536,809 [IMAGE AVAILABLE]

L19: 3 of 13

ABSTRACT:

Disclosed are novel polyether compounds obtained by the reaction or polymerization of 3,4-**epoxy**-1-butene in the presence of tetrahydrofuran, an acidic catalyst and a nucleophilic initiator compound. The polyether compounds comprise m units of residue (1), n units of residue (2), and p units of residue (3) wherein (i) residues (1), (2) and (3) have the structures: ##STR1## (ii) the total value of m+n+p is 5 to 70; (iii) the value of n/(m+n+p) is in the range of 0.2 to 0.4, i.e., residue (2) constitutes from 20 to 40 mole percent of the total moles of residues (1), (2) and (3); and (iv) at least 98 percent of the terminal groups have the structure: ##STR2##

4. 5,527,880, Jun. 18, 1996, Polyurethane foam-supported double metal cyanide catalysts for polyether polyol synthesis; Bi Le-Khac,

=25.6 cal/g) and branched high molecular weight PHO are also prepared.

11. 4,833,183, May 23, 1989, Poly [3-(substituted)-3(hydroxymethyl)oxetane] and method of preparing same; Edwin J. Vandenberg, 524/35, 47; 525/56, 60, 410, 411; 528/10, 14, **417** [IMAGE AVAILABLE]

US PAT NO: 4,833,183 [IMAGE AVAILABLE]

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ABSTRACT:

Poly[3,3-bis(hydroxymethyl)oxetane] ("PBHMO") is prepared in high molecular weight (n.sub.inh to 5.2) by polymerizing the trimethylsilylether of 3,3-bis(hydroxymethyl)oxetane with i-Bu.sub.3 Al-0.7 H.sub.2 O cationic catalyst at low temperature, followed by hydrolysis. PBHMO is crystalline, high melting (about 314.degree. C.), highly insoluble and useful in the production of films and fibers. Poly[3-methyl-3-(hydromethyl)oxetane] ("PMHMO") and poly[3-ethyl-3-(hydroxymethyl)oxetane] ("PEHMO") are also prepared in high molecular weight (n.sub.inh up to 3.8) by the same procedures. Copolymers of BHMO, MHMO, and EHMO with each other or containing up to about 50% of other oxethanes, oxiranes and tetrahydrofurans; derivatives and alloys from these polymers and copolymers; and methods of preparing the polymers, copolymers, alloys and derivatives into useful films, fibers and articles is described.

12. 4,405,762, Sep. 20, 1983, Preparation of hydroxy-terminated poly(3,3-bisazidomethyloxetanes); Robert A. Earl, et al., 525/410; 149/19.4, 19.6, 109.4, 122; **528/408**, **409**, **416**, **417** [IMAGE AVAILABLE]

US PAT NO: 4,405,762 [IMAGE AVAILABLE]

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ABSTRACT:

Polymerizing 3,3-bischloromethyloxetane to yield halomethyl polymer products having hydroxy functionality and a molecular weight between about 500-15,000 followed by reacting such products with metal azide provides poly(azidomethyloxetanes) particularly useful as energetic binders for explosives, gas generators and gun and rocket propellants. Polyhydric initiators are used in the polymerization step.

13. 4,393,199, Jul. 12, 1983, Cationic polymerization; Gerald E. Manser, **528/408*; 149/19.6; 526/348.7; **528/409**, **417**, **421** [IMAGE AVAILABLE]

US PAT NO: 4,393,199 [IMAGE AVAILABLE]

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ABSTRACT:

Method of carrying out cationic polymerization with molecular weight control in which a preinitiator precursor, e.g. a diol and a catalyst effective for cationic polymerization (or a preformed adduct of such precursor and catalyst) are mixed with a monomer (e.g. a cyclic ether) in proportions of one mol of precursor or adduct and n mols of monomer, where n is the relatively small number of mer units desired in the polymer, causing polymerization to proceed to completion, then treating the resulting living cationic polymer as desired, e.g. quenching with water to introduce a terminal hydroxyl group, adding another monomer to produce a block polymer, reacting with an anionic polymer, etc. Also polymers so formed. Such polymers have low polydispersity and conversion

and yield of the desired polymer are high.

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